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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,913	05/06/2002	Krishna S. Kumar	19141.0048U2	8295
23859	7590	07/12/2004	EXAMINER	
NEEDLE & ROSENBERG, P.C. SUITE 1000 999 PEACHTREE STREET ATLANTA, GA 30309-3915			NEGRON, ISMAEL	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/018,913	<b>Applicant(s)</b> KUMAR ET AL.	
	<b>Examiner</b> Ismael Negron	<b>Art Unit</b> 2875	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-46 is/are allowed.
- 6) ☒ Claim(s) 1-20, 22-25 and 37-41 is/are rejected.
- 7) ☒ Claim(s) 21, 26-36 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment filed on May 27, 2004 has been entered. Claims 1, 7, 15, 18, 25, 26, 28, 29, 34, 38 and 42 have been amended. No claim has been cancelled. Claims 43-46 have been added. Claims 1-46 are still pending in this application, with claims 1, 38, 43 and 44 being independent.

### ***Abstract***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

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2. The abstract of the disclosure is objected to because it exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4-14, 17, 18, 22-25 and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over WANER et al. (U.S. Pat. 5,839,446) in view of KONG et al. (U.S. Pat. 5,790,584).

WANER et al. discloses a laser device having:

- **a light source**, Figure 1, reference number 34;
- **the light source emitting at least one beam of light**, as seen in Figure 1;
- **a lens assembly**, Figure 1, reference numbers 27 and 28;
- **the lens assembly focusing the at least one beam of light on a surface plane**, column 3, lines 52-60;
- **the device sequentially directing the at least one beam of light to at least two locations on the surface plane**, column 5, lines 39-42;

- **the lens assembly including a collimating lens**, Figure 1, reference number 27;
- **a focusing lens**, Figure 1, reference number 28;
- **the focusing lens being located spaced from the focusing lens**, as seen in Figure 1;
- **the collimating lens being a cylindrical micro lens**, column 4, line 7;
- **the micro lens being mounted to the light source**, Figure 1;
- **the light source being a laser diode**, column 3, line 67;
- **the laser diode being a semiconductor laser diode chip**, column 3, line 67;
- **the light source and lens assembly being fitted into a hand held housing**, column 3, lines 4-8;
- **a power supply for powering the light source**, Figure 1, reference number 12;
- **a beam steering device for redirecting the at least one beam of light to at least two locations on the surface plane**, column 5, lines 39-42;
- **a controller for controlling the beam steering device**, column 5, lines 45-51;

- **the beam steering device having an optical element selected from the group consisting of a wedge prism, a tilted of angled plane, and a holographic plate, Figures 5A and 5B; and**
- **the light source having at least two laser diodes mounted on a mounting block, as seen in Figure 2.**

WANER et al. disclose all the limitations of the claims, except the beam steering device being a rotating wedge and a control system to control the rotation of the wedge.

KONG et al. discloses a laser device (Figure 1) having a rotating wedge (Figure 1, reference number 5), such rotating wedge enabling the laser device to produce high-power, uniform spatial intensity, laser pulses with high efficiency and repetition-rate (column 2, lines 3-8).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the rotating wedge of KONG et al. as the beam steering device of WARNER et al. to increase the efficiency and repetition rate of the laser device of WARNER et al., as per the teachings of KONG et al. (column 2, lines 3-8).

Regarding the method claims, such claims were considered to be inherently disclosed by the apparatus of WARNER et al. and KONG et al..

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over WANER et al. (U.S. Pat. 5,839,446) in view of KONG et al. (U.S. Pat. 5,790,584).

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WANER et al. and KONG et al. disclose individually, or suggest in combination, all the limitations of the claims, except the collimating lens and the focusing lens being Fresnel lenses.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use Fresnel lenses as the collimating and focusing lenses as such lenses are old and well known in the art to provide very high magnification values in a very thin, space saving lens. One would have been motivated to use such Fresnel lens to further reduce the size of the apparatus of WANER et al. and KONG et al..

5. Claims 15 and 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over WANER et al. (U.S. Pat. 5,839,446) in view of KONG et al. (U.S. Pat. 5,790,584).

WANER et al. and KONG et al. disclose individually, or suggest in combination, all the limitations of the claims, except the beam steering device having a stepper motor and a stepper motor controller controlling the movement of the beam steering device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a stepper motor as the actuator of the beam steering device of WANER et al. and KONG et al.. One would have been motivated since stepper motors are recognized in the illumination art to have many desirable advantages, including precise speed and position control, over other actuators.

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6. Claims 19, 20 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WANER et al. (U.S. Pat. 5,839,446) in view of KONG et al. (U.S. Pat. 5,790,584).

WANER et al. and KONG et al. disclose individually, or suggest in combination, all the limitations of the claims, except the device sequentially directing the at least one beam of light to at least four locations on the surface plane.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to sequentially direct the at least one beam of light to at least four locations on the surface plane, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

In this case, WANER et al. states that the patented device is capable of producing "multiple beams" (column 5, lines 39-51), such "multiple beams" were considered to suggest a number of beams higher than the claimed four beams.

### ***Relevant Prior Art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Hug et al.** (U.S. Pat. 3,657,792), **Landry** (U.S. Pat. 3,699,474), **Helava** (U.S. Pat. 3,881,802), **Miyauchi et al.** (U.S. Pat. 4,079,230), **Rando** (U.S. Pat. 4,544,228) and **Dwyer et al.** (U.S. Pat. 5,125,922) disclose a plurality of laser devices having beam steering means with rotating wedges.



***Allowable Subject Matter***

8. Claims 43-46 are allowed.
9. Claims 21, 26-36 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches a device having a plurality of laser diodes, the output of the laser diodes being focused by a lens assembly and sequentially redirected by beam steering means, to a plurality of target locations on a plane, each location being approximately 800 microns from each other. The laser diodes are mounted on opposite sides of a copper mounting-block, with a separate insulated wire-bonding pad for each laser diode. The mounting block includes at least two generally planar walls generally orthogonal to the plurality of target locations. The spacing between the walls generally fix the relative spacing between the target locations.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negrón whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached at (571) 272-2378. The facsimile machine number for the Art Group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.



**THOMAS M. SEMBER**  
**PRIMARY EXAMINER**

  
Inr

June 29, 2004